

Michael Stephen Saxon
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Education

University of California, Santa Barbara

Ph.D., Computer Science: **4.0/4.0**

Advisor: William Yang Wang, Ph.D.

Santa Barbara, CA

9/2020–6/2025

Arizona State University

MS., Computer Engineering: **3.9/4.0**

Advisors: Visar Berisha, Ph.D. & Sethuraman Panchanathan, Ph.D.

Tempe, AZ

8/2018–5/2020

Arizona State University

BSE., Electrical Engineering; Minor, Mathematics: **Magna Cum Laude**

Tempe, AZ

8/2014–8/2018

Publications

Archival

^ **Representative** ☆ **Award**

- [p13] **M. Saxon**, X. Wang, W. Xu, WY. Wang, “Relation Leakage in Elicited Natural Language Inference Datasets,” *Preprint arXiv:2112.09237*, Mar 2022.
- [c12] W. Xu, **M. Saxon**, M. Sra, WY. Wang, “Self-Supervised Knowledge Assimilation for Expert-Layman Style Transfer,” **AAAI 2022 arXiv:2110.02950**, Jan 2022.
- [c11] X. Wang, W. Chen, **M. Saxon**, WY. Wang, “Counterfactual Maximum Likelihood Estimation for Training Deep Networks,” **NeurIPS 2021 arXiv:2106.03831**, Dec 2021.
- [c10] **M. Saxon**, S. Levy, X. Wang, A. Albalak, WY. Wang, “Modeling Disclosive Transparency in NLP Application Descriptions,” **EMNLP 2021 Oral (8% of subs.) arXiv:2101.00433**, pp. 2023–2037.
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- [c9] **M. Saxon**, S. Choudhary, J. McKenna, A. Mouchtaris, “End-to-End Spoken Language Understanding for Generalized Voice Assistants,” **Interspeech 2021**, pp. 4738–4742.
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- [c8] S. Levy, **M. Saxon**, WY. Wang, “The Truth is Out There: Investigating Conspiracy Theories in Text Generation,” **arXiv:2101.00379, Findings of ACL 2021**, pp. 4718–4729.
- [j7] **M. Saxon**, A. Tripathi, Y. Jiao, J. Liss, V. Berisha, “Robust Estimation of Hypernasality in Dysarthria,”
^ **IEEE Trans. on Audio, Speech, and Language Processing** 2020, Vol. 28, pp. 2511–2522.
- [c6] **M. Saxon***, J. McKenna*, S. Choudhary*, G. Strimel, A. Mouchtaris, “Semantic Complexity in End-to-End Spoken Language Understanding,” **Interspeech 2020**, pp. 4273–4277.
- [c5] M. Moore, P. Papreja, **M. Saxon**, V. Berisha, S. Panchanathan, “UncommonVoice: A Crowdsourced Dataset of Dysphonic Speech,” **Interspeech 2020**, pp. 2532–2536.
- [c4] M. Moore, **M. Saxon**, H. Venkateswara, V. Berisha, S. Panchanathan, “Say what? A dataset for exploring the error patterns that two ASR engines make,” **Interspeech 2019**, pp. 2528–2532.
- [c3] **M. Saxon**, J. Liss, V. Berisha, “Objective Measures of Plosive Nasalization in Hypernasal Speech,” 2019 **IEEE ICASSP 2019**, pp. 6520–6524.
- [w2] **M. Saxon***, S. Bhandari*, L. Ruskin, G. Honda, “Word Pair Convolutional Model for Happy Moment Classification,” **2nd Workshop on Affective Content Analysis, AAAI 2019**, pp. 111–119.
☆ *(Workshop Oral; CL-Aff Shared task runner up, 2/47)*
- [c1] T. Houghton, **M. Saxon**, Z. Song, H. Nyugen, H. Jiang and H. Yu, “2D Grating Pitch Mapping of a through Silicon Via (TSV) and Solder Ball Interconnect Region Using Laser Diffraction” **IEEE**
☆

66th Electronic Components and Technology Conference (ECTC) 2016, pp. 2222–2227. (*Texas Instruments Best Student Interactive Paper Award*)

Non-archival Presentations

- [n3] **M. Saxon**, S. Levy, X. Wang, A. Albalak, WY. Wang, “Modeling Disclosive Transparency with GPT-2,” **SoCal NLP 2021**, Mar 2021.
- [n2] **M. Saxon**, J. Liss, V. Berisha, “A new model for objective estimation of hypernasality from dysarthric speech,” **Workshop on Signal Analytics for Motor Speech (SAMS), Motor Speech Conference 2020**, Feb 2020.
- [n1] B. Gupta, **M. Saxon**, T. McDaniel, S. Panchanathan, “Chat-Box: Proposing a Mood Analyzer for Individuals with Social Interaction Disabilities,” **HCI International Student Abstracts 2018**, pp. 394–401.

Professional Experience

Meta (Facebook Conversational AI) Menlo Park, CA
Research Intern 6/2022–

Amazon (Alexa Web-based Question Answering) Manhattan Beach, CA
Applied Science Intern 6/2021–9/2021
Mentors: Luca Soldaini, Eric Lind, Rik Koncel-Kedziorski, Alessandro Moschitti. End-to-end spoken QA, multi-modal LM pretraining using mixed phoneme-word synthetic and natural text, AS2 and DPR.

Amazon (Alexa Edge ML) Pittsburgh, PA
Applied Science Intern 1/2020–8/2020
Mentors: Samridhi Choudhary, Joe McKenna, Athanasios Mouchtaris. Investigated the link between semantic complexity of datasets (entropy and graphical measures) and the performance of SOTA E2E SLU models on them, [C6]. Developed a novel model stacking specialized transformer ASR and pre-trained BERT model with differentiable interface for E2E SLU optimization, [C9].

Amazon (Alexa Edge ML) Pittsburgh, PA
Applied Science Intern 5/2019–8/2019
Mentors: Joe McKenna, Samridhi Choudhary, Kai Wei, Athanasios Mouchtaris. Integrated neural end-to-end spoken language understanding for intent classification for Alexa. Explored architectures for “semantic endpointing,” stopping the recurrent inference once sufficient words have been heard.

Aural Analytics Scottsdale, AZ
Research Engineer Intern 12/2018–4/2019
Mentor: Shira Hahn. Integrated cloud-based ASR and developed in-house ASR models for integration in a clinical speech assessment product. Explored the design of deployable ASR systems robust to quality reduction under dysarthria.

General Dynamics Mission Systems Scottsdale, AZ
Embedded Software Engineering Intern 5/2017–7/2017

Research Interests

Natural language processing; dataset analysis; ethics and transparency in AI; end-to-end spoken language understanding; representation and transfer learning; semi-supervised learning; dysarthric speech

Skills

Software Proficiencies

Python (Pytorch, HuggingFace, Numpy, SciPy, AllenNLP), BASH, Apache Spark, C/C++, OpenCV, Kaldi, MATLAB, Linux, Verilog

Conceptual

Deep learning, pattern matching, natural language processing (NLP), automatic speech recognition (ASR), digital signal processing (DSP), embedded programming, multimedia processing, sensor fusion

Selected Graduate Coursework

Probability; information theory; speech processing, recognition, compression; neural computer vision; image compression and processing; syntax; semantics; spectral graph theory and computation; statistical machine learning

Service

<i>Reviewer</i> , IEEE ICASSP	2020–2021
<i>Reviewer</i> , EMNLP Insights from Negative Results Workshop	2021
<i>Reviewer</i> , IEEE GlobalSIP	2019
<i>Mentor</i> , FIRST Robotics Team 2478 (Westwood Robotics), Mesa, AZ	2014–2016

Mentoring

Aditya Sharma, Justin Chang, Nga Ngo, Matthew Ho	<i>UCSB Undergrad Group</i> , 2021–2022
Alex Mei	<i>UCSB Undergrad</i> , 2021–2022
Ayush Tripathi	<i>Visiting ASU Researcher</i> , Summer 2018

Honors

National Science Foundation <i>Graduate Research Fellowship</i> (NSF GRFP)	2020
University of California, Santa Barbara <i>Center for Responsible Machine Learning Fellowship</i>	2020
Phi Kappa Phi <i>Inductee</i>	2016
IEEE Eta Kappa Nu (HKN) <i>Inductee</i>	2015
Arizona State University <i>Presidential Scholarship</i> (Full Tuition)	2014
Boy Scouts of America <i>Eagle Scout Award</i>	2011